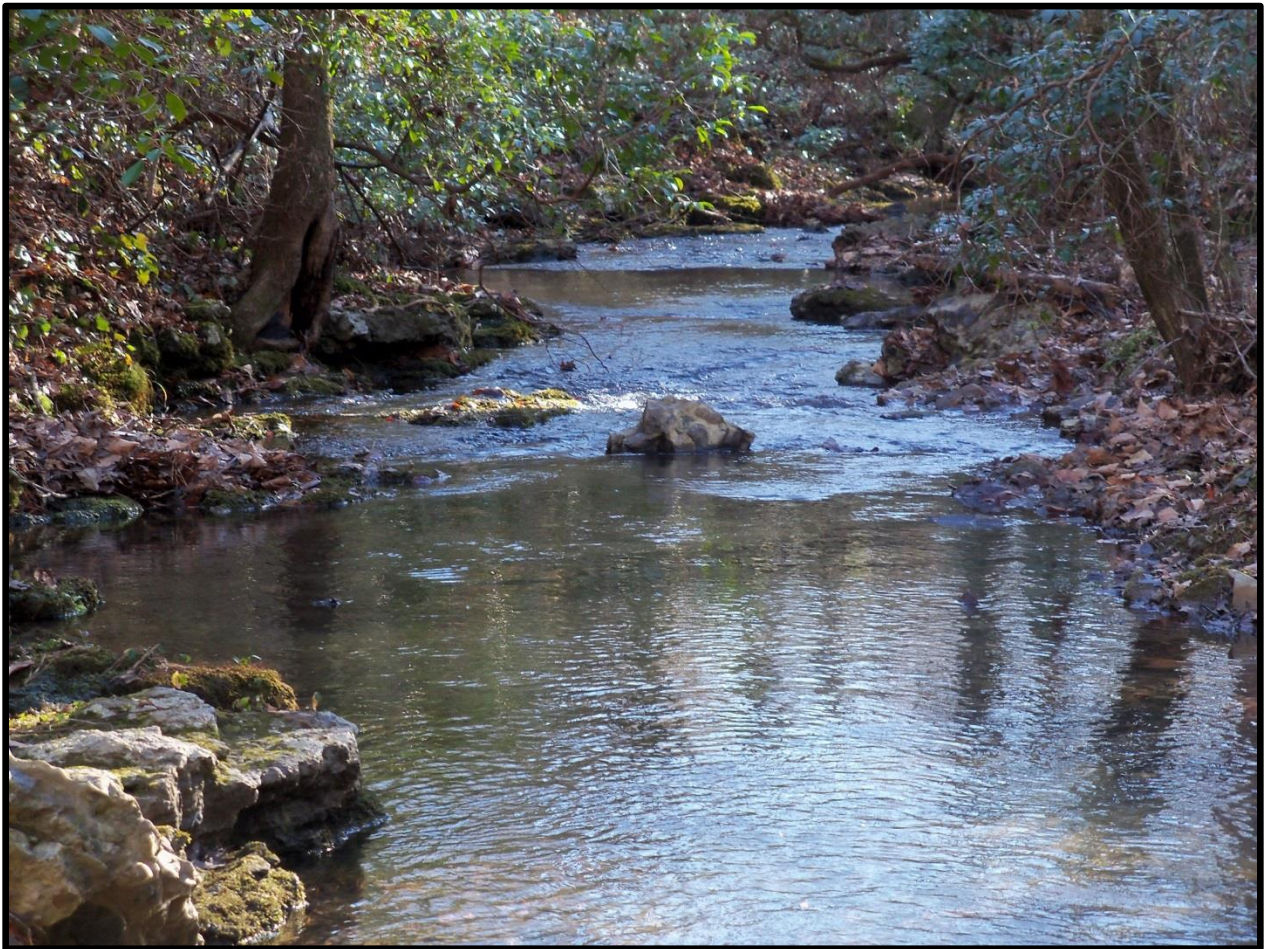


**Conasauga Ranger District  
Chattahoochee-Oconee National Forests**

**WATERSHED ASSESSMENT:  
UPPER WEST ARMUCHEE CREEK WATERSHED  
(031501030501)**



Ponder Creek, Compartment 904

**December 19, 2013**

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\_\_\_\_\_/ April 7, 2014

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Chattahoochee-Oconee National Forests

DATE



# **WATERSHED ASSESSMENT**

## **UPPER WEST ARMUCHEE CREEK WATERSHED**

**(6<sup>th</sup> level HUC #031501030501)**

### **Introduction**

Analysis at a landscape scale is a process used to characterize the human, aquatic, and terrestrial resources, and interactions within an area. It provides a systematic way to understand and organize ecosystem information. These assessments enhance our ability to estimate direct, indirect, and cumulative effects of management activities and guide the general type, location, and sequence of appropriate management activities.

In most cases, a combination of small sub-watersheds or sixth level Hydrologic Unit Codes (HUCs) will be used as the area for analysis. The watershed scale was selected because watersheds are well-defined and they provide a sense of place. However, when there are over-riding biological or social issues these analysis units may vary and be more landscape-oriented.

Rather than attempting to identify and address everything in the ecosystem, the watershed assessment focuses on key prescription areas and resource concerns in the area being analyzed. These concerns may be known or suspected before undertaking the analysis; or they may be brought up by the public or discovered during the inventory phase. The watershed assessment describes desired and existing conditions and determines possible management practices to sustain or restore ecosystem functions. The process is also incremental: new information from surveys and inventories, monitoring reports, the public, or other analyses can be added at any time.

Watershed assessments are not decision-making processes, and are not driven by existing law. Rather, it is a stage-setting process. The results of assessments establish the context for subsequent site-specific actions needed to implement the Forest Plan. Site-specific actions must then undergo planning requirements consistent with the National Environmental Policy Act and other applicable laws, regulations, and direction.

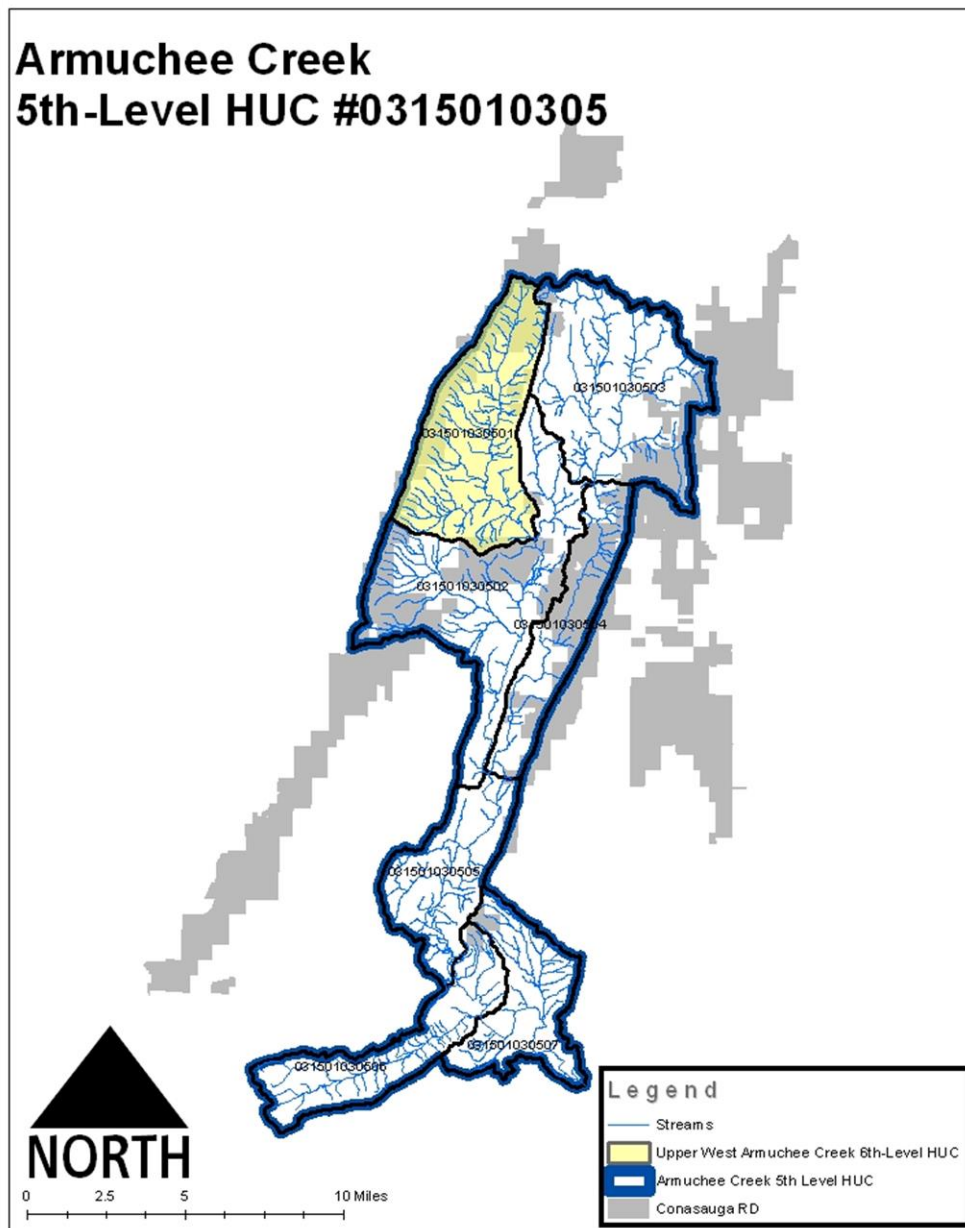
Information about this process can be found in the “Ecosystem Analysis at the Watershed Scale” (USDA, 1995) and “A Framework for Analyzing the Hydrologic Condition of Watersheds” (USDA, 1998).

### **I. Characterization of the Watershed**

The Upper West Armuchee Creek (UWAC) watershed (6<sup>th</sup>-level HUC #031501030501) is within the Oostanaula River drainage of the upper Coosa River Basin, which is known for having the highest percentage of endemic aquatic species in North America. Over 30 species of fishes, snails, mollusks, and crayfish occur nowhere else. This aquatic biodiversity is a result of the diverse geography within the 500,000 acre basin.

At a finer or more local scale, the UWAC watershed is contained within the larger Armuchee Creek 5<sup>th</sup>-level hydrologic unit (HUC #0315010305). The Armuchee Creek 5<sup>th</sup>-level HUC encompasses 91,900 acres, 24% of which are National Forest lands (22,130 acres). The UWAC watershed is one of seven, 6<sup>th</sup>-level HUCs contained within the Armuchee Creek 5<sup>th</sup>-level Hydrologic Unit (Figure 1). It is located in the upper northwestern portion and includes 15, 883 acres. Approximately 35 percent of the UWAC watershed is located on National Forest lands (5, 566 acres).

Figure 1: Armuchee Creek 5<sup>th</sup>-Level HUC.



The headwaters of West Armuchee Creek and its main tributaries are perennial streams flowing generally north to south through the watershed. Fish commonly found in the upper Coosa River basin occur, including endemic shiners and darters. There are no known T&E species within the UWAC, and no EPD-listed impaired stream segments.

The UWAC watershed is bounded by Taylor's Ridge to the west and northwest, Strawberry Mountain to the south, and Dick's and Rocky Ridge to the east and northeast. The lowland interior area framed by these ridges is known as the West Armuchee Valley. The upper (north) end of the watershed forms the divide between the Tennessee and Alabama River Basins.

Ecologically, the UWAC watershed is situated in the Southern Ridge and Valley Section (231D) and Sandstone Ridge Subsection (231Dc). These two ecological units are levels of a National Hierarchical Framework (Cleland et al. 1997) used by the Forest Service to organize land units at different scales based on similarities in climate, geology, landforms, and vegetation patterns. The units provide data and information on the nature and distribution of ecosystems and provided the basis for ecosystem management. At a broader scale, the Southern Ridge and Valley Section falls within the Humid Temperate Domain (200), Subtropical Division (230), and Southeastern Mixed Forest Province (231).

Within the Sandstone Ridge subsection, the UWAC watershed is divided between two Landtype Associations (LTAs) - (1) Armuchee Ridges LTA (231Dc01) and (2) Shale Valleys LTA (231Dc03). As suggested, upland sites within the watershed associated with Taylor's Ridge, Strawberry Mountain, Dick's Ridge, and Rocky Ridge fall within the Armuchee Ridges LTA, while West Armuchee Valley falls within the Shale Valleys LTA. Over 97 percent of National Forest lands in the UWAC watershed fall within the Armuchee Ridges LTA.

The Armuchee Ridges LTA is characterized by narrow, generally parallel ridges oriented along a north-northeast to south-southwest axis. Characteristic parallel finger ridges extend east-southeast (or perpendicular) from main ridges along the eastern slopes of these ridge systems. Between finger ridges are shallow, intermittent streams which join together at the base of ridges to form small perennial streams that enter the characteristic "valleys" paralleling the major ridge systems of this LTA. The Armuchee Ridges LTA represents the "ridges" of the Sandstone Ridges subsection of the Southern Ridge and Valley section described above. The LTA is primarily forested. Dominant vegetation includes xeric yellow pine and mixed yellow pine-oak communities. Elevation ranges from 1400 to 1600 feet.

The Shale Valleys LTA is located on the interior lowlands between higher adjacent ridges. It is characterized by broad, U-shaped valleys and extensive agricultural/residential land use. Major perennial streams, including West Armuchee Creek are present in this LTA. Native forest vegetation includes mixed oak and yellow pine forests. Elevation ranges from 650 to 800 feet. Annual precipitation in both LTAs averages 55 inches per year.





MRx areas 9.H and 6.B combined comprise over 95 percent of the watershed. The distribution of MRx areas within the UWAC watershed assessment area is summarized in the table below:

MRx	Name	Acres	Percent of Watershed
6.B	Areas managed to restore or maintain old growth characteristics	970	17%
7.B	Scenic corridors and sensitive viewsheds	219	4%
9.H	Management, maintenance, and restoration of plant associations to their ecological potential	4,377	79%
<b>Total</b>		<b>5,566</b>	<b>100%</b>

The majority (79 percent) of the UWAC watershed is located within **MRx 9.H**. This prescription emphasizes management, maintenance, and restoration of plant associations to their ecological potential. The focus should be on 1) communities in decline, 2) communities converted from historic composition by land uses, 3) communities on ecologically appropriate sites but unable to maintain themselves, and 4) communities infrequent on national forest but not regionally rare (Plan p. 3-167).

Approximately four percent of the watershed (219 acres) is located within **Management Prescription 7.B**. This prescription is focused on maintaining or restoring high scenic quality along a highway or road. The corridor along Georgia State Road 136 that dissects Taylors Ridge at Maddox Gap is included in this prescription area.

The remainder of the watershed (970 acres or 17 percent) falls within **Management Prescription 6.B** – Areas managed to restore/maintain old growth characteristics. This MRx area is confined to the upper slopes of Taylors Ridge along the western boundary of the watershed and to areas of Forest Service ownership along Dicks Ridges south of SR 136 on the eastern boundary of the watershed.

### Key Issues

#### **1. Loss and Declining Stature of Shortleaf Pine-Oak Communities**

Fire-maintained shortleaf pine-oak forests and associated woodland habitats are declining in the UWAC watershed. The stability of these communities is dependent on frequent fire disturbances to maintain an open forest structure, which facilitates regeneration and recurrent recruitment of individuals to the overstory. Decades of fire exclusion have altered these processes/conditions to a degree that these communities can no longer maintain themselves through self-replacement. On the dry sites in the UWAC watershed, a closed-canopy forest structure with notable mid-story layers has replaced the former woodland structure that frequent fire provided. Discernible shifts in species composition exist, as xeric sites where fire disturbances were historically common, are now dominated



by dense stands of fire intolerant species (Virginia pine) or are shifting towards a hardwood composition.

Epidemic-scale southern pine beetle (SPB) infestations (1998-2001), stimulated by interactions of drought and higher tree densities (due to suppression of fire), and combined with a lack of regeneration, have further reduced the shortleaf pine component in the watershed.

Past logging practices and land-uses have also impacted these fire-adapted communities. Populations of montane longleaf pine, though not currently present in the assessment area, are associated with areas along Taylors Ridge in neighboring watersheds. It is certainly reasonable to estimate that its presence along Taylors Ridge was reduced by the extensive logging that occurred at the turn of last century. More current practices have resulted in the establishment of loblolly pine on upland sites where fire-adapted communities once existed.

Current capacity to restore fire into fire excluded areas is limited to two burn units located on opposing ends of the watershed. Opportunities for expanding prescribed fire into other areas in this watershed present another obstacle to this critical resource issue.

## **2. Forest Health**

The referenced practice of planting loblolly pine in the watershed also has forest health implications. Today, these planted stands are crowded and overstocked, with an elevated risk for SPB infestation.

## **3. Successional Habitat Stage Diversity**

There is lack of habitat diversity in the assessment area. Areas of early successional forest habitat are absent on National Forest lands in the UWAC watershed. This habitat has been reduced since the 1930's as regenerating forests matured, fire was suppressed, grazing herds eliminated, and timber management decreased.

## **4. Soil and Water**

Soil and water resource damage is occurring in small isolated areas in the watershed and immediate environs. These include: illegal UTV access points at utility rights-of-way at the end of Ponder Creek Road and also near Manning Mill/confluence of West Armuchee and Dicks Creek (including illegal access of Pinhoti trail); dispersed camping sites in the riparian corridor at the end of Ponder Creek Road; and dispersed camping and trash dumping on National Forest lands on Cantrell Road and pull-off locations located on FSR 250 (Maddox Gap).

## 5. Trail Proposals

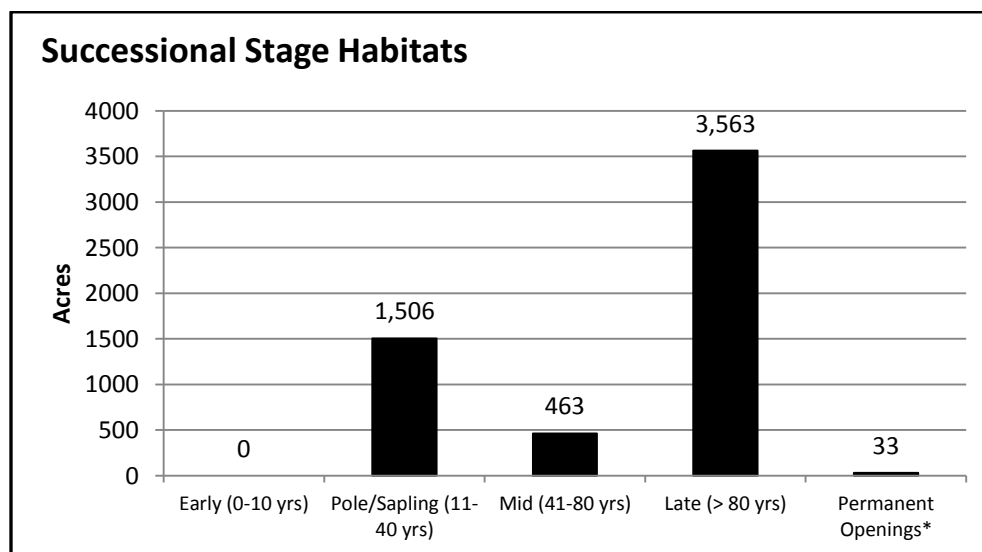
A segment of the Chickamauga Creek trail is located within the UWAC watershed. This trail has received increased interest in recent years prompted by the Forest's CoTrails initiative. The Forest has recently received a proposal to modify the current managed-use/designation of this trail to include mountain bikes. Proposed management changes (decommissioning) for the Taylors Ridge trail are also under consideration.

## 3. Description of existing and desired future conditions

### Resource Area: Terrestrial Habitats

#### Successional Stage Habitat Distribution

Existing Condition:



\*Permanent openings are represented by linear rights-of-way for power and gas lines and a pasture allotment managed under special-use permits.

Over 70 percent of the National Forest lands in the UWAC watershed are in mid-to-late successional stage forest habitats, with over 64 percent in late successional stages (> 80 years old). Early successional stage forest habitats (ESH) are absent from National Forest lands in the assessment area. A general decline in forest management activities for more than a decade has resulted in the reduction of ESH across the National Forest including areas in the assessment area. Sapling/pole stage forest habitat is present on 27 percent of the acres of National Forest lands in the watershed. These areas represent the district's pine management activities in recent decades, including the establishment of loblolly pine

plantations and earlier shortleaf pine restoration plantings. Permanent openings, including linear rights-a-way for power and gas lines and a 19 acre pasture allotment, account for less than one percent of Forest Service acreage in the UWAC watershed. These areas are managed under special-use permits.

Desired Condition: A diversity of habitat conditions is provided for the full range of native and other desired species. The desired successional stage habitat conditions by MRx area are presented in the table below:

Mgt. Rx Area	Early Successional Habitat				Mid to Late Successional			Late Successional		
	Desired Range (% of MRx)	Current	Desired		Desired Range (% of MRx)	Current	Desired	Desired Range (% of MRx)	Current	Desired
			Min	Max						
		-----Acres-----				-----Acres-----			-----Acres-----	
6.B	N/A	0	N/A	N/A	N/A	790	N/A	N/A	599	N/A
7.B	0-4%	0	0	9	75%	187	164	50%	159	110
9.H	4-10%	0	175	438	50%	3049	2189	20%	2805	875

Objectives for mid-to-late successional stage forest habitat ranges from 50 to 75 percent of forested acres in applicable MRx areas in the UWAC watershed (7.B and 9.H). This objective is currently being met and/or exceeded in both MRx 7.B and 9.H. The desired condition for ESH ranges from 175 to 447 acres based on ESH objectives within applicable MRX Areas. ESH objectives are not currently being met in applicable MRx Areas in the UWAC watershed.

Possible Management Practices/Opportunities: Manage forest vegetation to provide a diversity of successional stage habitat within ranges specified by Management Prescription Areas. Establish up to 9 acres of ESH in MRx Area 7.B and from 175 to 438 acres within MRx Area 9.H. ESH would be established primarily from possible restoration activities associated with objectives listed under Goal 3 (described below). Acres of mid to late and late successional habitat currently meet or exceed desired levels for both management prescription areas.

Related Forest Plan Goals/Objectives:

- **Goal 2.** A diversity of habitat will be provided for the full range of native and other desired species. Sufficient amounts of interior or late-successional habitat as well as early-successional habitat will be provided to meet need of all successional communities. Early successional habitat will be well distributed in all forest types, elevations, aspects, and sloped including riparian corridors.

Inventory Needs: Use stand exams to identify opportunities/needs for restoration of which ESH conditions would result within the desired ranges specified above.

## Forest Communities

Existing Condition: Forest composition in the UWAC watershed is typical of that found throughout the Southern Ridge and Valley ecoregion – “mixed” yellow pine and oak forests. Vegetation occurs in fairly predictable patterns, with dry-mesic oak forests occupying the characteristic drainages between finger ridges and dry oak-pine and xeric pine communities occupying ridges and exposed slopes (Figure 3). Current distribution of the major forest communities in the UWAC watershed is given in the table below:

Major Forest Community	Acres
Yellow pine and mixed yellow pine-oak	3,443
Oak and mixed oak-yellow pine	2,104
Non-forest	19
<b>Total</b>	<b>5,566</b>

### *Yellow pine and mixed yellow pine-oak*

The yellow pine and mixed yellow pine-oak community occupies approximately 62 percent of the watershed. As noted earlier, this community is located primarily on xeric ridges and exposed aspects within the assessment area. Forest types associated with the yellow pine/yellow pine-oak forest community in the UWAC watershed are shown in the table below:

Forest Type (FT)	Acres	Percent of Yellow Pine Community	Percent of Watershed
12 – Shortleaf pine-oak	555	16%	10%
32 – Shortleaf pine	46	1%	1%
<b>Total Shortleaf pine FTs</b>	<b>601</b>	<b>17%</b>	<b>11%</b>
13 – Loblolly pine-oak	74	2%	1%
31 – Loblolly pine	927	27%	17%
<b>Total Loblolly pine</b>	<b>1001</b>	<b>29%</b>	<b>18%</b>
16 – Virginia pine-oak	1347	39%	24%
33 – Virginia pine	494	14%	9%
<b>Total Virginia pine FTs</b>	<b>1841</b>	<b>53%</b>	<b>33%</b>
<b>Community Total</b>	<b>3443</b>	<b>100%</b>	<b>62%</b>

Current forest type distribution illustrates the effects of fire suppression and past practices on fire dependent communities in the assessment area (table above). Areas supporting fire-dependent communities of shortleaf pine-oak woodlands have been reduced across the UWAC watershed. Today, shortleaf pine-oak forest types represent less than 20 percent of the yellow pine/yellow pine-oak community and account for only 11 percent of the acreage in the watershed.

Current inventory data for the watershed indicate that only 221 acres of mature shortleaf pine-oak remain. These areas are characterized by closed-canopy conditions with hardwood mid-stories — environments where shortleaf pine cannot maintain dominance through self-replacement. The shortleaf pine-oak community is maintained by a system of periodic fire and other interacting disturbances that work in tandem to create and maintain open canopies (woodland condition), reduced woody mid-stories, and a receptive seedbed for seedling establishment. This community becomes unstable (perishable) when these conditions are interrupted. Existing areas of mature shortleaf pine/oak in the watershed will not be maintained under current conditions.

Recent restoration plantings (since the mid-1970's) account for the remaining two-thirds of the current shortleaf pine/oak forest types in the watershed (380 acres). Intermediate treatments (pre-commercial thinning) have been applied in most of these areas in recent years to stabilize the shortleaf pine component in these planted stands.

In the absence of periodic fire disturbances, open woodlands canopies have closed, shifting a shortleaf pine dominated composition towards other species. Stands of fire-sensitive Virginia pine are the dominant vegetation in the assessment area. They currently account for over one-half of the acreage in the yellow pine/yellow pine-oak community and one-third of the acreage in the watershed. The majority of these areas date to the early decades of last century. This generally coincides with the timber harvests of that era prior to Forest Service acquisition, and the decades of fire suppression that followed thereafter.

Establishment of loblolly pine plantations has also shifted (reduced) composition on xeric upland sites in the watershed. Loblolly pine forest types currently account for nearly one-third of the acres in the yellow pine/yellow pine-oak community and nearly 20 percent of the acreage in the watershed. These areas are characterized by dense, overcrowded conditions and an elevated risk for SPB infestations.

### ***Oak and mixed oak-yellow pine***

The oak and mixed oak-yellow pine community is present on 38 percent of the assessment area. Forest type distribution within the oak/oak-pine community is summarized in the table below:

<b>Forest Type (FT)</b>	<b>Acres</b>	<b>Percent of Oak Community</b>	<b>Percent of Watershed</b>
45 – Chestnut oak-scarlet oak-yellow pine	396	19%	7%
47 – White oak-black oak-yellow pine	24	1%	<1%
48 – Northern red oak-hickory-yellow pine	54	3%	1%
<b>Total Mixed oak-yellow pine FTs</b>	<b>474</b>	<b>23%</b>	<b>9%</b>



52 – Chestnut oak	181	9%	3%
53 – White oak-northern red oak-hickory	1449	69%	26%
<b>Total oak FTs</b>	<b>1630</b>	<b>77%</b>	<b>29%</b>
<b>Community Total</b>	<b>2104</b>	<b>100%</b>	<b>38%</b>

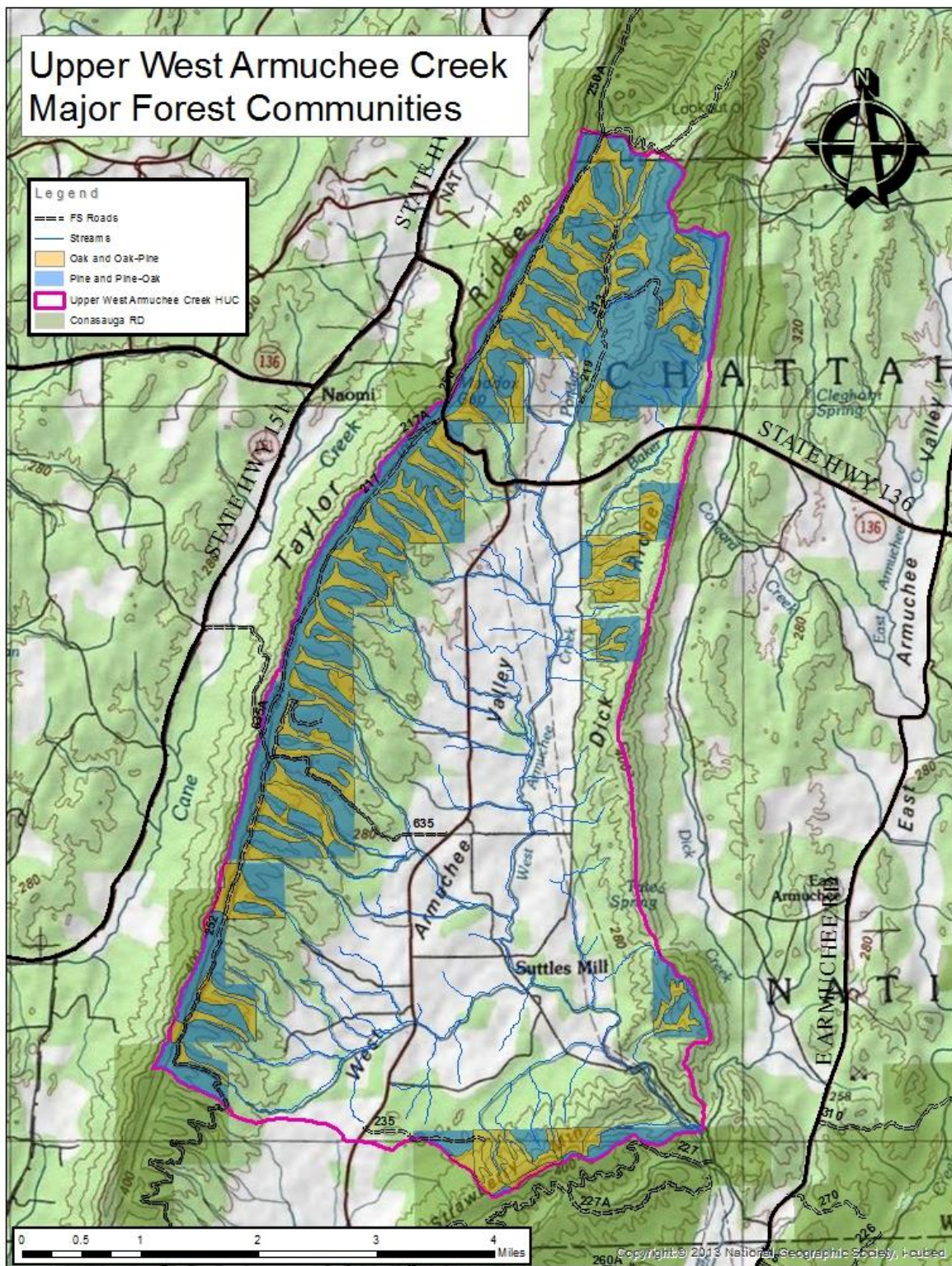
The majority of the oak/oak-yellow pine community is comprised of forest type 53 (69%). This forest type is most abundant in drainages that parallel finger ridges on Taylors Ridge (Figure 3).

Other oak-dominated forest types (45, 47, 48 and 52) are less abundant and generally occupy similar sites as the pine community in the watershed (dry ridges and exposed aspects). These forest types account for 23 percent of the oak/oak-yellow pine community. The acreage represented by these forest types will likely increase over time as individual tree mortality and continued fire suppression shift mixed yellow pine communities towards an oak dominated composition.

Over 94 percent of the oak/oak-yellow pine community is in late successional stage habitat (> 80 years old), and over one-third of this community is over 100 years old. Inherently low site productivity combined with advanced age increase the vulnerability of oak stands to oak decline in the assessment area. Current inventory data from the watershed indicate that over 93 percent of the acres supporting oak forest types are vulnerable to oak decline due to age and site quality relationships. Less than 150 acres of this community is in earlier successional stages of development (pole and mid successional stages).

The future abundance of oak forest in the assessment area will be dependent on (1) the management of existing oak stands to create conditions that perpetuate oak (i.e. promote oak regeneration beneath existing oak canopies) and (2) the ability to increase their abundance through restoration on sites currently dominated by other forest types.

Figure 3. Major forest communities in the UWAC watershed.



Desired Condition: Forest communities are managed, maintained and/or restored to their ecological potential. Host forest types vulnerable to pest epidemics and disease are in healthy conditions with a decreased susceptibility for infestations and decline. Forest communities are managed to improve resilience and adaptability to predicted climate change and associated disturbances. Forest communities are well represented across all seral stages of development, including early successional stages.

Possible Management Practices/Opportunities:

- Restore shortleaf pine communities on sites currently dominated by Virginia pine. Consider restoration of montane longleaf pine on appropriate sites as an adaptive strategy for predicted climate change. Restoration actions could include commercial regeneration harvests followed by artificial reforestation activities (site preparation, tree planting and individual tree release). There is an estimated 1,841 acres of Virginia pine forest types in the assessment area.
- Restore open woodland habitats on appropriate sites in the assessment area. Potential actions could include commercial and/or non-commercial thinning, prescribed burning and treatment of woody mid-story vegetation. There is an estimated 2,500 acres in the watershed with the potential to meet this objective.
- Maintain existing shortleaf pine forest types in the assessment area. Potential actions could include: (1) commercial thinning, prescribed burning, and treatment of mid-story vegetation in mature shortleaf pine stands and (2) individual tree release treatments (non-commercial) in younger shortleaf pine stands. There is an estimated 601 acres of existing shortleaf pine forest types in the assessment area.
- Establish young stands of oak to improve age-class distribution in the oak community by restoring oak forest types on sites currently dominated by loblolly pine. Potential actions could include commercial removal of loblolly pine and other species to release existing oaks in planted loblolly pine stands.
- Reduce mid-story vegetation in mature oak stands to encourage oak regeneration.
- Use prescribed fire to support the restoration and maintenance objectives described above. There are two existing burn units in the assessment area. Coordinate locations of potential fire-dependent restoration and maintenance activities to occur within these existing burn units. Otherwise, coordinate these activities to occur where the potential exists to expand existing burn units or establish new burn unit blocks.
- Reduce stem density in overstocked loblolly pine stands to improve forest health conditions. There are an estimated 1,041 acres of overstocked loblolly pine stands in the assessment area.

### Related Forest Plan Goals/Objectives:

- **Goal 3.** Enhance, restore, manage and create habitats as required for wildlife and plant communities, including disturbance-dependent forest types.
  - **Objective 3.1.** Within the first 10 years of Plan implementation restore 1,100 acres of shortleaf pine forests on the Chattahoochee on sites where they once likely occurred.
  - **Objective 3.4.** Within the first 10 years of Plan implementation restore 10,000 acres of open woodlands, savannas, and grasslands on the Chattahoochee. Once created, maintain woodlands, savannas, and grasslands on a five-year burning cycle or less.
  - **Objective 3.5.** Within the first 10 years of Plan implementation restore 1,100 acres of mountain longleaf pine and longleaf pine-oak forests within the Southern Ridge and Valley ecological section on sites where they once likely occurred.
  - **Objective 3.6.** Within the first 10 years of Plan implementation restore oak or oak-pine forests on 1,250 acres of the Chattahoochee on appropriate sites currently occupied by pine plantations or other hardwood species such as gum and maple.
  - **Objective 3.7.** To maintain oak and oak-pine forests, reduce stem density on 5,500 acres on the Chattahoochee of these forest types within the first 10 years of Plan implantation.
- **Goal 8.** Contribute to maintenance and restoration of native tree species whose role in forest ecosystems: (a) has been reduced by past land use; or (b) is threatened by insect and disease, fire exclusion, forest succession, or other factors.
  - **Objective 8.1.** To maintain shortleaf pine forests on the Chattahoochee in desired conditions:
    - Thin overstory trees on an average of 400 acres per year of this forest type.
    - Reduce hardwood mid-story on an average of 6,000 acres per year of this forest type.
- **Goal 40.** Through appropriate management, reduce populations of native and non-native pest species or vulnerability to them.
  - **Objective 40.1.** Maintain forest-stocking levels at no more than 'fully stocked' for the species, age, and site quality with priority for treatment given to those vegetation communities at highest risk of insect or disease attack.
    - Reduce stem density on an annual average of 1,500 acres of overstocked loblolly pine stands on the Chattahoochee during the first 10 years of Plan implementation.

- Reduce stem density on an annual average of 1,500 acres of overstocked shortleaf pine stands on the Chattahoochee during the first 10 years of Plan implementation.

#### Inventory Needs:

1. Use stand exams to identify the most appropriate sites for shortleaf pine (and mountain longleaf pine) restoration, open woodland restoration, and/or shortleaf pine maintenance treatments in context of the capability of the areas to be included in prescribed burn unit blocks. Give higher preference to (1) those areas that lie within existing burn units and (2) to those areas where existing burn units could be expanded or new logical areas could be established with a low degree of new disturbance for fire-lines. Coordinate with district fire management personnel to determine probable locations for new or expanded burn units.
2. Make field visits to all shortleaf pine stands in the assessment area to determine maintenance treatment needs.
3. Make site visits to all mapped loblolly pine forest types in the assessment area. Use site visits to: (1) determine need for commercial thinning to meet forest health objective 40.1 and/or (2) identify opportunities to restore oak or oak-pine forest types on these sites based on amounts and sizes of oak within the stands.

### **T & E and Sensitive/Locally Rare Species/Rare Communities**

Existing Condition: There are no known populations of threatened, endangered, or sensitive terrestrial wildlife species in the UWAC; however, potential habitat exists for Indiana bat (*Myotis sodalis*) (E), northern long-eared bat (*Myotis septentrionalis*) (proposed for federal listing as E), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) (S), and eastern small-footed bat (*Myotis leibii*). These bats use loose bark and/or cavities on snags and trees for roosting and maternity roosting while on their summer range, or loose rock or crevices in the case of *M. leibii*. Forests of north Georgia are considered within the summer range of each species.

There are several sinkholes, rocky slopes, and rock outcrops on National Forest in this watershed. These can be classified as Rare Communities (9.F) and are currently unmapped. One rock outcrop located in Compartment 923 is at risk of being overtaken by kudzu, which has expanded from nearby private land onto National Forest.

Green salamander (*Aneides aenus*)(LR) has been recently found on rock outcrops in the Armuchee Ridges project area (Taylor's Ridge and Johns Mountain), but no occurrences are known from the UWAC to date. A number of sinkholes and caves are located on private land due to large amounts of limestone/karst geology in the valley portion of the UWAC.



Habitat exists for northern pine snake (*Pituophis m. melanoleucus*)(LR) in the UWAC. Its range is not well known in northwest Georgia but a few populations have been found in the Ridge and Valley province (one in Whitfield County). It prefers dry, upland hardwood and mixed oak-pine forest, and is secretive (spends most of its time underground).

Significant amounts of National Forest land have been surveyed for rare plants, but Forest Service and Georgia Department of Natural History/Natural Resources records have documented no rare plant populations in the UWAC. Georgia aster (*Symphyotrichum georgianum*)(S, but likely proposed for federal listing in 2014) is not known from the watershed, but could potentially occur there.

Rare aquatic species will be covered in the Aquatic section of this document.

Desired Condition: Existing rare communities will be managed optimally for protection, through the Rare Community Prescription (9.F) standards.

Possible Management Practices/Opportunities: Prescribed fire use and timber harvest (especially thinning overstocked pine plantations) should be utilized in the UWAC in order to restore open woodland habitat, and increase suitability for bat foraging and roosting habitat. Georgia aster, if present, would also benefit from these practices.

Kudzu threatening to overtake rock outcrop should be controlled by herbicide treatment and/or manual methods.

Related Forest Plan Goals/Objectives:

- **Goal 15.** Contribute to conservation and recovery of federally-listed threatened and endangered species through habitat maintenance and/or enhancement and, where possible, for their reintroduction into suitable habitats, and contribute to avoiding the necessity for federal listing of other species under the Endangered Species Act.
  - Objective 15.1. These objectives are established to contribute to the recovery of PETS plants (for Georgia aster, increase number of populations/occurrences by improving and/or increasing available habitat and relying on natural recruitment...)
- **Goal 18.** Cooperate with the USFWS, Georgia Department of Natural Resources (DNR), and academia in conducting research on National Forest T&E species and their response to management.
- **Goal 19.** Contribute to the conservation of State-identified locally rare species in cooperation with the Georgia Department of Natural Resources.
- **Goal 44.** Identify and delineate any rare communities found on Forest lands, and then incorporate them into management prescriptions 4.D or 9.F.
  - **Objective 9.F.01.** Based on periodic monitoring of known rare community sites, identify management activities needed to maintain or restore characteristic

structure, composition, and function of these communities, and implement an annual program of work designated to meet these needs.

Inventory Needs:

1. During project-level inventories, identify any rare communities present and implement the appropriate protective or enhancement measures.
2. Prior to any ground disturbing activities, project-level inventories for PETS species will be conducted. Georgia aster surveys should be conducted during October-November.

## **Old Growth**

Existing Condition: A total of 970 acres or 17 percent of the UWAC watershed is currently allocated to old growth conservation by management prescription (MRx 6.B). This includes medium-sized blocks of old growth allocated along portions of Taylors Ridge and areas along the western slopes of Dicks Ridge south of SR 136 (see Figure 2). Old growth types represented in MRx 6.B are summarized in the table below:

<b>Old Growth Type</b>	<b>Acres</b>
21 – Dry-mesic oak forest	124
22 – Dry & xeric oak forest, woodland & savanna	56
24 – Xeric pine and pine-oak forest & woodland	<1
25 – Dry and dry-mesic oak-pine forest	789
<b>Total</b>	<b>970</b>

Nearly 40 percent of the acres allocated to MRx 6.B currently meet or are within 20 years of meeting minimum old growth age criteria by old growth type. Individual stand ages within MRx 6.B range from 28 to 124 years old (base year 2013), providing a balance of existing areas of “possible” old growth with areas of younger forests conserved for future old growth development. Approximately 183 acres of MRx 6.B is comprised of young loblolly pine or mixed pine-oak plantations established during the last 40 years. These areas account for 19 to 33 percent of the acres within individual medium-sized old growth blocks allocated within MRx 6.B in the UWAC watershed.

An additional 216 acres (four stands) meet or exceed minimum old-growth age criteria by old growth type in areas outside of MRx 6.B.

Desired Condition: Old growth characteristics are restored and/or maintained in areas managed for old growth conservation. Areas allocated for old growth conservation are well distributed and represented, and are present on five percent of the acres of each 6<sup>th</sup>-level HUC containing at least 1,000 acres of National Forest lands.

Possible Management Practices/Opportunities: Areas allocated to old growth conservation within MRx 6.B exceed the old growth conservation objectives in the UWAC watershed (17 percent). No additional allocations through small block conservation are required.

Consider treatment (thinning) of young loblolly pine plantations within MRx 6.B to encourage development of old growth characteristics (large trees, gaps, snags, understory diversity, etc.) and to decrease risk of SPB infestations that could reduce the capability of these areas to attain old growth criteria in the near future (MRx 6.B-003 standard).

Related Forest Plan Goals/Objectives:

- **Goal 9.** Manage through protection, maintenance, or restoration, a variety of large, medium and small old growth patches to provide biological and social benefits.
- **Goal 20.** Provide a well-distributed and representative network of large, medium and small potential old growth blocks in the Blue Ridge and Southern Ridge and Valley ecological sections.
  - **Objective 20.1.** Reserve 5 percent of each 6<sup>th</sup>-level HUC that has at least 1,000 acres of National Forest in management that will conserve existing, or provide for the development of future, old growth.

Inventory Needs: Evaluate young loblolly pine stands located within MRx 6.B for commercial thinning opportunities during stand exams/inventory in the watershed.

## **Wildlife Openings**

Existing Condition: Two linear wildlife openings and two non-linear wildlife openings totaling 11.5 acres are managed by the Forest Service in the UWAC. All four are maintained as cool-season forb/grass plots and are maintained by mowing annually. Non-native invasive plants are present in all openings.

Desired Condition: Wildlife openings within the analysis area are maintained in desirable nonnative or native grasses and forbs and provide optimal habitat conditions for a wide variety of game and non-game species. NNIS associated with wildlife openings are controlled.

Possible Management Practices/Opportunities: An additional 3-5 acres of wildlife openings should be created in Compartment 921 if/when ground disturbing activities are conducted (i.e. timber harvest). Existing wildlife openings should be rehabilitated by herbicide treatments and replanting. A portion of each opening should be planted in native warm-season grasses and forbs for additional diversity. Linear openings should be side-arm mowed in addition to the above treatments.

#### Related Forest Plan Goals/Objectives:

- **Goal 2.** A diversity of habitat will be provided for the full range of native and other desired species. Sufficient amounts of interior or late-successional habitat as well as early-successional habitat will be provided to meet needs of all successional communities. Early successional habitat will be well distributed in all forest types, elevations, aspects, and slopes including riparian corridors.
- **Goal 12.** Minimize adverse effects of invasive native and nonnative species. Control such species where feasible and necessary to protect national forest resources.

Inventory Needs: Existing wildlife openings should be inventoried for NNIS.

### **Non-native Invasive Species (NNIS)**

Existing Condition: NNIS surveys have been conducted along most of the Forest Service roads in the UWAC. The following roadside NNIS infestations have been documented

<b>Road Number</b>	<b>Road Name</b>	<b>NNIS</b>	<b>Distribution</b>
FSR 635	Smith Gap	Chinese lespedeza	Widespread
		Privet	Widespread
		Johnsongrass	Patchy
		Mimosa	Isolated
FSR 635A	Smith Gap A	Chinese lespedeza	Widespread
		Japanese honeysuckle	Isolated
		Bicolor lespedeza	Isolated
		Princesstree	Isolated
FSR 217	S Maddox Gap	Japanese stiltgrass	Scattered
		Chinese lespedeza	Scattered
		Bicolor lespedeza	Patchy
		Crown vetch	Widespread
FSR 252	Ruff Creek	Chinese lespedeza	Widespread
		Japanese stiltgrass	Patchy
		Johnsongrass	Isolated
		Privet	Scattered
		Japanese honeysuckle	Isolated
		Mimosa	Isolated
FSR 235	West Armuchee	Privet	solid hedge on private land, large patch on FS
		Kudzu	extensive patch on private land and FS
FSR 250	Maddox Gap	Chinese lespedeza	Widespread
		Privet	Patchy
FSR 219	Ponder Creek	Chinese lespedeza	Widespread

		Privet	several large patches
FSR 227	Manning Mill	Privet	several large patches near W. Armuchee Creek, Dicks Creek confluence
		Chinese lespedeza	Widespread

NNIS populations are also present in wildlife openings and utility rights-of-way. These areas have not been inventoried but are likely to contain Japanese honeysuckle, tall fescue, autumn olive, Chinese lespedeza, and johnsongrass.

An extensive kudzu infestation is present in the vicinity of the National Forest property boundary near FSR 235 (see table above). This infestation originated on a nearby farm following the harvest of timber and has encroached onto National Forest. A nine-acre patch on National Forest was treated with clopyralid (Transline) in 2010.

Desired Condition: NNIS populations are controlled to the extent possible.

Possible Management Practices/Opportunities:

- Identify and map existing NNIS populations.
- Control NNIS populations through both chemical and mechanical means.
- Explore opportunities to map and treat entire private/FS kudzu patch off FSR 235, possibly with future CWKV, stewardship funding, or other cost-share funding.
- Explore opportunities to share cost of treating NNIS on utility ROW's with permittees.

Related Forest Plan Goals/Objectives:

- **Goal 12.** Minimize adverse effects of invasive native and nonnative species. Control such species where feasible and necessary to protect national forest resources.

Inventory Needs: Inventory wildlife openings and utility ROWs for NNIS.

## Resource Area: Soil & Riparian and Aquatic Habitats

### Soil

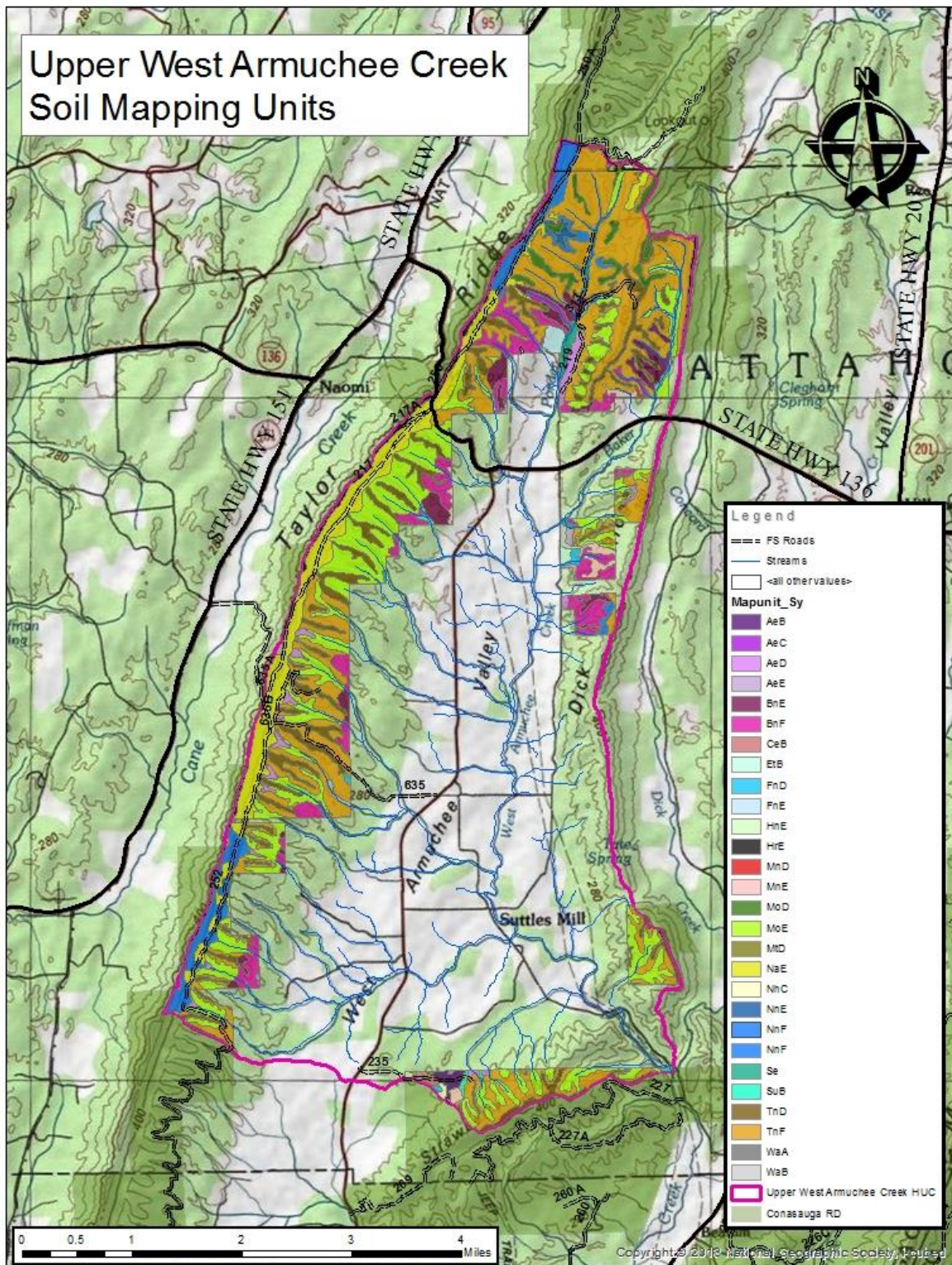
Existing Condition: A total of 17 soil series and 27 soil mapping units have been delineated on National Forest lands in the UWAC watershed. Their distribution is shown in the table below:



Soil Series	Mapping Units	Acres	% of Watershed
Allen fine sandy loam	AeB, 2-6% slope	24	0.4%
	AeC, 6-10% slope	2	0.0%
	AeD, 10-15% slope	96	1.7%
	AeE, 15-25% slope	14	0.3%
Bodine gravelly silt loam	BnE, 10-25 % slope	215	3.9%
	BnF, 25-60 % slope	423	7.6%
Colbert-Lyerly Complex	CeB, 2-6% slope	7	0.1%
Etowah Loam	EtB, 2-6% slope	8	0.1%
Fullerton gravelly silt loam	FnD, 10-15% slope	15	0.3%
	FnE, 15-50% slope	27	0.5%
Hartsells-Nauvoo Complex	HnE, 10-25% slope	2	0.0%
Hector-Townley Rock Outcrop	HrE, 10-25% slope	86	1.5%
Minvale-Shack Complex	MnD, 10-15% slope	4	0.1%
	MnE, 15-25% slope	54	1.0%
Montevallo channery silt loam	MoD, 6-15% slope	96	1.7%
	MoE, 15-55% slope	1143	20.5%
Montevallo-Townley Complex	MtD, 6-15% slope	6	0.1%
Nauvoo fine sandy loam	NaE, 15-30% slope	545	9.8%
Nauvoo-Hartsell Complex	NhC, 6-10% slope	5	0.1%
Nella gravelly fine sandy loam	NnE, 15-30% slope	19	0.3%
	NnF, 30-60% slope	273	4.9%
Steadman silt loam	SE, frequently flooded	52	0.9%
Subligna very cobbly sandy loam	SuB, 1-6% slope, occasionally flooded	38	0.7%
Townley-Montevallo Complex	TnD, 10-15% slope	531	9.5%
	TnF, 15-45% slope	1861	33.4%
Wax loam	WaA, 0-2% slope frequently flooded	4	0.1%
	WaB, 2-6% rarely flooded	20	0.4%
<b>Total</b>		<b>5566</b>	<b>100.0%</b>

Prominent soil series in the watershed include: Bodine, Monetvallo, Nauvoo, Nella, and Townley-Montevallo Complex. In general, these soils occur in repeating patterns associated with the major landforms and topographic features in the watershed – Nauvoo and Nella on primary ridge formations; Townley-Montevallo on finger and secondary (side) ridges; and Bodine and Montevallo on lower side slopes and upper reaches of sinuses between ridges (Figure 4). Combined, these soils comprise 90 percent of the mapped soil units in the UWAC. Remaining and less represented soils in the UWAC are restricted to riparian areas, toes slopes at bases of ridges and other specialized sites in the watershed.

Figure 4: Soil mapping units in the UWAC.



Ratings for selected soil interpretations relevant to management of National Forest resources are depicted in the table below.

Soil Series	Mapping Units	Acres	Harvest Equipment	Erosion hazard (off road/trail)	Soil rutting hazard
Allen fine sandy loam	AeB, 2-6% slope	24	Well suited	Slight	Moderate
	AeC, 6-10% slope	2	Well suited	Slight	Moderate
	AeD, 10-15% slope	96	Well suited	Slight	Moderate
	AeE, 15-25% slope	14	Moderately suited	Moderate	Moderate
Bodine gravelly silt loam	BnE, 10-25 % slope	215	Moderately suited	Moderate	Moderate
	BnF, 25-60 % slope	423	Poorly Suited	Severe	Moderate
Colbert-Lyerly Complex	CeB, 2-6% slope	7	Moderately suited	Slight	Severe
Etowah Loam	EtB, 2-6% slope	8	Moderately suited	Slight	Severe
Fullerton gravelly silt loam	FnD, 10-15% slope	15	Moderately suited	Slight	Severe
	FnE, 15-50% slope	27	Moderately suited	Moderate	Severe
Hartsells-Nauvoo Complex	HnE, 10-25% slope	2	Moderately suited	Moderate	Severe
Hector-Townley Rock Outcrop	HrE, 10-25% slope	86	Moderately suited	Moderate	Moderate
Minvale-Shack Complex	MnD, 10-15% slope	4	Moderately suited	Slight	Severe
	MnE, 15-25% slope	54	Moderately suited	Moderate	Severe
Montevallo channery silt loam	MoD, 6-15% slope	96	Well suited	Slight	Moderate
	MoE, 15-55% slope	1143	Poorly Suited	Severe	Moderate
Montevallo-Townley Complex	MtD, 6-15% slope	6	Moderately suited	Slight	Moderate
Nauvoo fine sandy loam	NaE, 15-30% slope	545	Moderately suited	Moderate	Moderate
Nauvoo-Hartsell Complex	NhC, 6-10% slope	5	Moderately suited	Slight	Severe
Nella gravelly fine sandy loam	NnE, 15-30% slope	19	Moderately suited	Moderate	Moderate
	NnF, 30-60% slope	273	Poorly Suited	Severe	Moderate
Steadman silt loam	SE, frequently flooded	52	Moderately suited	Slight	Severe
Subligna very cobbly sandy loam	SuB, 1-6% slope, occasionally flooded	38	Well suited	Slight	Slight
Townley-Montevallo Complex	TnD, 10-15% slope	531	Moderately suited	Moderate	Severe
	TnF, 15-45% slope	1861	Poorly Suited	Severe	Severe
Wax loam	WaA, 0-2% slope frequently flooded	4	Moderately suited	Slight	Severe
	WaB, 2-6% rarely flooded	20	Moderately suited	Slight	Severe

**Harvest equipment suitability:** Two-thirds (66 percent) of the acres in the watershed are rated as poorly suited for ground-based harvest equipment due to soil limitations related to slope steepness. This includes soil units BnF, MoE, NnF, and TnF, which are mapped on slopes in excess of 30 percent (upper slope limit). On the Chattahoochee NF, harvest units are not established on slopes in excess of 35 percent, which is the typical operability limits for ground-based harvest systems.

**Erosion hazard (off road/trail):** Ratings for this interpretation indicate the hazard of soil loss from off-road or off-trail areas after disturbances where 50-75 percent of the soil surface is exposed. A severe rating indicates erosion is probable and mediation such as revegetation of bare soil is advised. Soil mapping units in the UWAC that have slope gradients in excess of 30 percent (upper limit) have soil hazard ratings of severe. This



includes approximately two-thirds (66 percent) of the soil mapping unit acres in the watershed (BnF, MoE, NnF, and TnF). Disturbances associated with timber harvests and other resource management on National Forest lands in areas off roads or off trails do not normally result in 50-75 percent soil surface exposure, and areas where soil surfaces have been exposed are revegetated in conformance with Forest Plan standards and state Best Management Practices (BMPs). Typical harvest operations occur on slopes near or below 35 percent slope (limitation of ground-based harvest equipment).

**Soil rutting hazard:** This interpretation indicates the hazard of soil rut formation through operation of harvest equipment. Depth to water table, rock content in upper soil surface and slope are variables used to determine the ratings under this interpretation. In the UWAC, nearly half (47 percent) of the soil mapping unit acres have a severe soil rutting hazard rating due to low strength (CeB, EtB, FnD, FnE, HnE, MnD, MnE, NhC, SE, TnD, TnF, WaA, and WaB). Conducting harvest operations during drier periods of the year, use of logging slash/debris on areas with heavy traffic and use of logging vehicles with high flotation tires can minimize rut formation on soils determined more susceptible to rutting/compaction.

Desired Condition: Soil productivity is maintained and/or enhanced during management activities.

Possible Management Practices/Opportunities: Incorporate appropriate Forest Plan standards and state BMPs into project design criteria for recommended activities that include soil disturbance and into routine maintenance/repair activities:

- Minimize construction of new temporary access roads for harvest activities by re-utilizing previous routes, where available.
- Utilize existing or natural features such as roads, trails, utility corridors, or streams for fire-lines to reduce the need for new construction.
- Use manually constructed fire-lines on steep slopes and in the riparian corridor.
- Limit layout of harvest units to areas with slopes less than 30-35 percent.
- Restrict harvest operations to dry weather conditions to minimize soil compaction and rut formation.
- Locate log landings and skid trails away from sensitive soils and riparian areas.
- Install waterbars and other erosion control measures on skid trails, temporary roads, and fire-lines after use.
- Effectively close/block fire-lines, temporary roads, and skid trails to discourage illegal ATV use.
- Re-vegetate skid trails, landings, temporary roads, fire-lines, and other areas of exposed soil after completion of activities.
- Maintain/repair areas on Forest Service system trails or roads that are or could contribute to soil and water resource damage.

- Develop and prioritize soil and water improvement projects in areas identified as contributing to soil and water resource damage (see Riparian and Aquatic Habitats and Recreation resource sections for potential opportunities).

#### Related Forest Plan Goals/Objectives:

- **Goal 24.** Maintain or restore soil productivity and quantity.
  - **Objective 24.1.** Soil and water improvement needs are prioritized and restoration work is done annually based on field inventories and assessments.

#### Inventory Needs:

- Assess resource damage and rehabilitation needs at illegal access points and dispersed camping areas located in the watershed (see Riparian and Aquatic Habitats and Recreation sections for locations).
- Conduct survey of Chickamauga Creek trail for maintenance/repair needs. Identify any soil/water resource issues (stream crossings, slope gradient, etc.) related to potential change in managed-use/designation of trail for bicycle traffic.

## **Riparian and Aquatic Habitats**

Existing Condition: West Armuchee Creek and its primary tributaries, Ponder Creek, Hampton Branch (also known as Baker Creek), Shop Creek, and Greenbush Branch, are the main streams draining the UWAC. The mainstem of West Armuchee Creek is located almost entirely on private land and traverses agricultural settings with varying stream buffer widths. Its tributaries have their origins on National Forest and are intermittent in flow depending on the season. Their riparian corridors on National Forest are completely forested other than short segments crossing utility ROWs. None of the streams in the UWAC are listed by EPD as impaired (not meeting their designated use, which is fishing).

Streamflows in the Southern Ridge and Valley section, including those in the UWAC, tend to fluctuate due to the porous soils and gravelly streambeds present there. A stream 15 feet across in early spring may dry up completely between pools by early summer. Pools created by high water events are usually deep enough to carry fish through the dry period, however. Water chemistry in these streams is more conducive to fish production than on other parts of the Forest, being higher in pH and dissolved solids. An obvious indication of this is the presence of watercress and other aquatic plants not normally found on Forest streams. Redeye bass (*Micropterus coosae*) is the primary game fish found in UWAC streams. Other common game fish are redbreast sunfish (*Lepomis auritus*), longear sunfish (*L. megalotis*), and the southern variety of the rock bass (*Ambloplites rupestris*). Smaller streams such as Ponder Creek and the other West Armuchee tributaries are occupied by endemic species such as Coosa darter (*Etheostoma coosae*)(LR), greenbreast darter (*E. jordoni*) (LR), and tricolor shiner (*Cyprinella trichroistia*). All UWAC streams are listed as

year-round trout streams by the Georgia Department of Natural Resources. West Armuchee Creek is heavily stocked with rainbow trout during the summer months.

As in most Upper Coosa River Basin drainages, freshwater mollusk diversity is high in the Armuchee Creek drainage, with 11 species and 3 subspecies known (Johnson and Evans 2000). The headwater streams of the UWAC are not considered suitable habitat for many bivalves or snails due to their intermittent nature, but West Armuchee Creek is a fairly large perennial stream with a healthy mollusk population. Just south of the UWAC boundary, below the FSR 227 (Manning Mill Road) stream crossing, 12 species are found. Mussel species there include Tennessee heelsplitter (*Lasmigona holstonia*)(S) and Alabama rainbow (*Villosa nebulosa*)(S) and six species of aquatic snails. Water quality declines after the stream exits National Forest land as it travels through agricultural land, and declines precipitously in lower Armuchee Creek; a 20-mile segment in Floyd County is listed as impaired, with a commercial fishing ban in place due to industrial and non-point pollution. A population of the interrupted rock snail (*Leptoxis foremani*) was rediscovered in the Oostanaula River near the mouth of Armuchee Creek in 1997. This species was listed as endangered in 2010, and seven miles of the Oostanaula River was designated as critical habitat for the species.

Aquatic habitat within the UWAC streams on National Forest is in good condition overall due to the forested landscape. Forests provide excellent filters and protect water quality. Sediment from unpaved forest roads does affect aquatic habitat in localized areas after heavy rains. Some perennial stream crossings in the UWAC consist of low-water fords, but the majority of streams are crossed by culvert pipes. Many of these are perched and do not allow passage by aquatic organisms.

Several locations within the UWAC have soil and water impacts:

- There are several dispersed campsites along Ponder Creek within the riparian corridor which have impacted vegetation and possibly aquatic habitat.
- The utility ROW at the end of FSR 219 has been illegally accessed by vehicles. An intermittent stream has been impacted by vehicles, and a large mudhole has been created.
- The block of National Forest land on Cantrell Road has dispersed recreation use which has impacted vegetation and resulted in trash dumping.
- Several road pull-offs with dump sites are located on FSR 250 (Maddox Gap).
- The public has access to West Armuchee Creek near the Dicks Creek confluence by crossing a utility ROW. The DNR uses this access for trout stocking.

Desired Condition: Streams within the analysis area are managed to provide optimal habitat for aquatic species. Barriers to aquatic passage are reduced or eliminated.

Possible Management Practices/Opportunities: Stream crossings on Forest Service roads should be assessed regarding sedimentation and/or aquatic passage problems. Dispersed campsites and user-made trails/roads should be gated or otherwise blocked if resource problems are present. Consider seasonal closure of Maddox Gap Road (FSR 250) to minimize/deter illegal dumping.

#### Related Forest Plan Goals/Objectives

- **Goal 24.** Maintain or restore soil productivity and quantity.
  - **Objective 24.1.** Soil and water improvement needs are prioritized and restoration work is done annually based on field inventories and assessments.
- **Goal 26.** Restore and/or maintain aquatic ecosystems in amounts, arrangements, and conditions capable of supporting viable populations of all native and desired nonnative species of aquatic flora and fauna within the planning area.
  - **Objective 26.2.** Inventory annually, on a representative sample basis, 10 percent of perennial stream miles for biota (including nonnative species) and/or habitat improvement needs.
  - **Objective 26.3.** Within ten years of Plan implementation assess fourth order or larger streams within National Forest ownership for barriers to stream biota passage. Prioritize identified barriers for mitigation.

Inventory Needs: Road/stream crossing condition inventory. Dump site inventory. Visit the area near Dicks Creek confluence to determine public access effects.

## **Resource Area: Recreation and Visual Resources**

Existing Condition: Approximately 98 % of the Upper West Armuchee Creek watershed occurs within the Roded Natural (RN) Recreational Opportunity Spectrum (ROS) class. In the roded natural class, recreation can be either developed or dispersed, depending on the management prescription. In general, the RN is a setting in an area that is within 1/2 mile of a better than primitive road. Access is primarily via conventional motorized use on roads. Contact frequency with other users may be low to moderate on trails and moderate to high on roads. The environment is natural appearing as viewed from visually sensitive roads and trails.

The other 2% of the UWAC is within the Semi-Primitive, Non-Motorized (SPNM) ROS. The SPNM has a setting that has an area of primitive roads or trails that are not open to motorized use and is between 1/2 and 3 miles from all roads, railroads, or trails with



motorized use. Access is via non-motorized trails or non-motorized primitive roads or cross-country. Recreation is dispersed. Forest users can expect low contact frequency with other visitors and have a high probability of experiencing solitude in a natural-appearing environment.

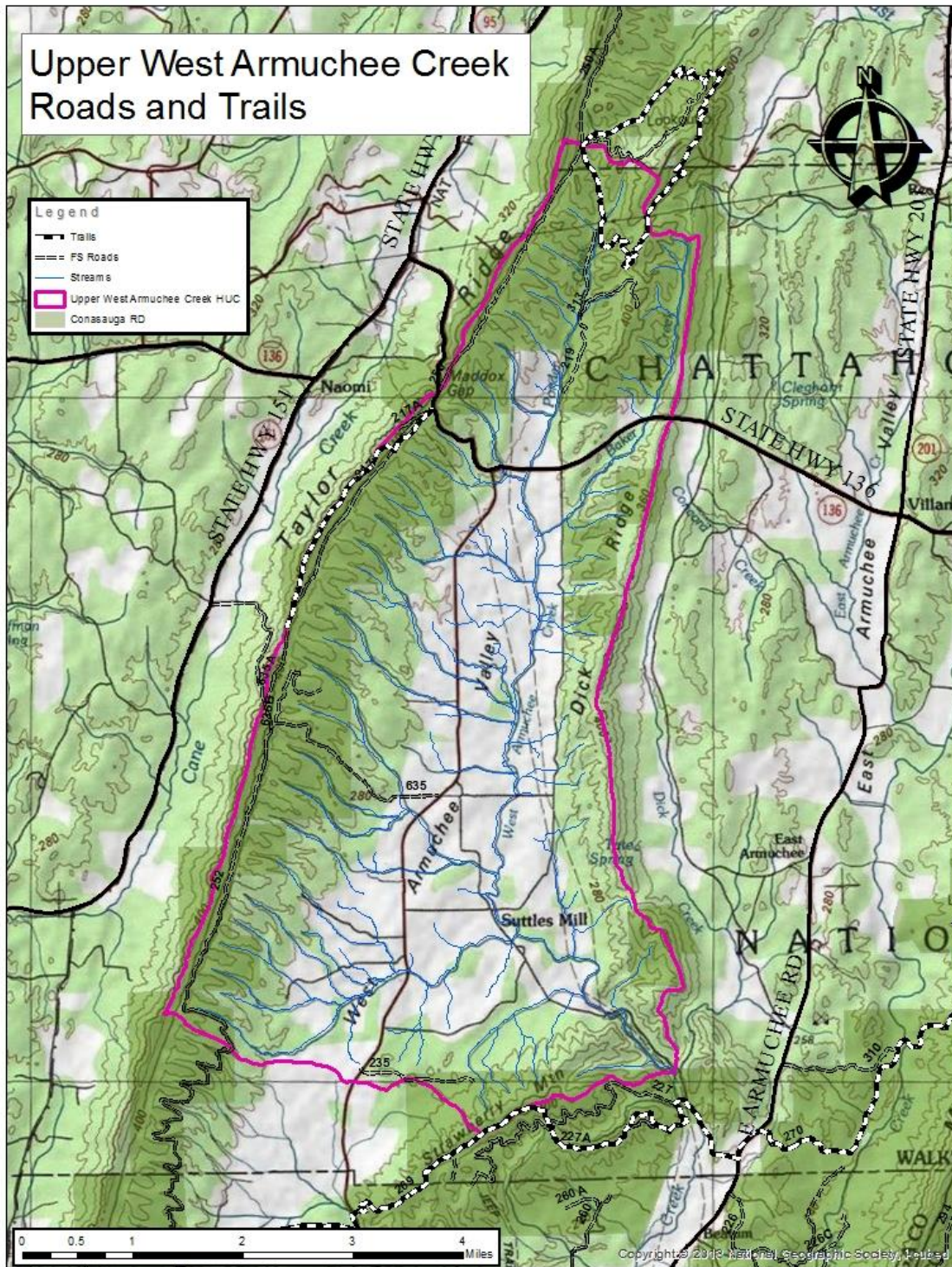
Overall, recreational use of the Upper West Armuchee Creek watershed is considered low. Use is generally confined to hunting, fishing, dispersed camping, hiking, mountain biking, and horseback riding. There are no highly developed recreation facilities within the watershed, however, there are three moderately-developed trails, three undeveloped trail access parking areas, and several moderate-use dispersed camping areas (see Figure 5).

Approximately 2.0 miles of FDT 67, the Chickamauga Creek Trail, lie within the designated project area. This trail is a trail class 3, non-motorized trail with a designed and managed use of hiking only. Motorized travel, horse and mountain bike usage are prohibited. It forms a 6.2 mile loop which includes other trail access points along FSR 250. The trail has significant wildflower viewing opportunities in the late spring and summer. The trail is intermittently marked with plastic trail blazes and routed signs where the trail crosses FSR 250, and at a major junction in FSR 219, Ponder Creek Road. There is a sporadic problem with ATVs and 4wd vehicles illegally accessing and travelling this trail from the end of FSR 250. Historically the trail use has been low and primarily associated with turkey hunting in the area. However, its popularity is increasing due to its inclusion in recent Co-Trails-related fiscal year planning. There has been a formal proposal brought forward to the district through the Co-Trails Issues and Opportunities process to designate mountain bike use on the trail. There is an undeveloped trailhead for this trail at the end of FSR 219, a well-maintained gravel road also known as the Ponder Creek Road. Along this road, there is also a moderately used dispersed camp site, located approximately 0.1 mile south of the trailhead. The campsite is directly adjacent to Ponder Creek.

Also within the UWAC is an approximately 0.5 mile section of the Pinhoti Trail, FDT 3, a state-wide non-motor trail that has a designed use of hiking, but is also managed for horseback riding and mountain biking. This section, often referred to as the Strawberry Mountain section, is mainly a ridge-line trail overlaid on existing old roadbed. The tread along this trail section is between 8 and 10 feet wide and is very stable. The trail narrows down to a footpath near the western boundary of existing UWAC burn units and continues as the southern border of the burn unit until the trail drops down off the ridgeline and crosses FSR 227A as it heads east towards the Manning Mill area. In the Manning Mill area, which lies just outside the UWAC boundary, there are several highly-used dispersed camping sites which currently are riddled with illegal ATV trails that follow a natural gas

pipeline, illegally access a section of the Pinhoti trail, and lead over to the old Manning Mill site along the West Armuchee Creek.

Figure 5: Forest Service System Roads and Trails in the UWAC.



FDT 14, Taylor's Ridge trail, is a 2.71 mile ridgeline hiking trail that runs entirely along the northwestern border of the UWAC. This Class 3 trail is an out and back trail designed and managed for hiking only. It has very low usage primarily by hunters, and has been proposed by the district ORA to be decommissioned. There are small, undeveloped parking areas/trailheads at both ends of this trail: a one car pull-off just off of SR 136 to the north, and a turn-around area at FDR 635 to the south. A gated road, FSR 217, parallels this entire trail a short distance to the east.

Two separate, small dispersed recreation sites exist within the UWAC along County Road 24, also known as Cantrell Rd. These areas are user-developed sites that are not associated with any natural or developed feature such as a trail, and are likely "party" spots as evidenced by the large amount of alcohol containers consistently littering these areas.

#### Desired Condition:

- A variety of recreation opportunities exist and are appropriate for the setting (ROS).
- Recreation activities do not adversely affect natural resources.
- Visitors will view high-quality scenery in a setting conducive to a variety of recreational experiences.

#### Possible Management Practices/Opportunities

1. Create a sustainable small dispersed camp site area on the west side of FSR 219 near the parking area for the Chickamauga Creek Trail.
2. Create a parking area that could accommodate horse trailers off County Road 706 to provide access to the "Strawberry Mountain" section of the Pinhoti trail.
3. Decommission the Taylor Ridge Trail, FDT 14. Limited trail resources could be utilized more efficiently on other, higher use trail systems.
4. Install closures to eliminate illegal ATV use branching off from a user-established dispersed site on the western side of West Armuchee Creek near Manning Mill.
5. Create a sustainable mountain bike trail/route utilizing portions of the FDT 67, Chickamauga Creek trail, and portions of FSR 250. Would require changing trail designation and managed use, designation of FSR 250 as a bike route, and installation of additional signage to mark bike-appropriate portions of FDT 67. Construct small informational kiosk at existing parking area at end of FDT 219 to post regulations and maps. Make repairs to minor trail bridge located just off end of Ponder Creek road at trail beginning. (Some parts of this project would fall outside of the boundaries of the UWAC).
6. Close and rehabilitate existing, user-created dispersed camping site located just off FSR 219. Site is within 25 feet of Ponder Creek.
7. Remove/block access to and rehabilitate two user-created dispersed sites off Cantrell Road, County Rd 24.
8. Utilize heavy equipment to re-shape .1 mile of the Pinhoti trail , FDT 3, just north of the junction with FSR 227. Currently, eroded rolling dips and waterbars are not

functioning correctly and loss of tread is occurring. The area where the failures are occurring is directly adjacent to the tributaries of West Arnmuchee Creek. This area falls just outside of the UWAC, however, this section of the Pinhoti trail has historically been utilized as access for the dozer to the adjacent burn units within the UWAC.

9. Use the Inventoried Scenic Class System when designing management actions in project areas to meet Scenic Integrity Objectives.
10. Consider development of pull-off viewing and picnicking area at Maddox Gap on Hwy 136. Amenities might include picnic tables, a viewing deck and restrooms.

#### Related Forest Plan Goals/Objectives

- **Goal 29.** Protect and enhance the scenic/aesthetic values and the Landscape Character of the National Forest Lands in the Southern Appalachians, the Ridge and Valley and the Piedmont by meeting all adopted Scenic Integrity Objectives on Forest Service Lands within individual management prescriptions.
- **Goal 31.** Provide a spectrum of high quality, nature-based recreation settings and opportunities that reflect the unique or exceptional resources of the Forest and the interests of the recreating public on an environmentally sustainable, financially sound, and operationally effective basis. Adapt management of recreation facilities and opportunities as needed to shift limited resources to those opportunities.
  - **Objective 31.1.** Recognize and respond to emerging recreation trends and uses within the Forest recreation niche by periodic assessments.
- **Goal 34.** Trails do not adversely affect soil and water resources.
  - **Objective 34.1.** Prioritize OHV, horse and pack stock, bike,, and hiking trails for condition surveys based on their risk of causing adverse effects, conduct surveys, prioritize for remedial action those that are found to be adversely affecting soil and water resources, and correct those situations within five years of Plan implementation.
  - **Objective 34.2.** For trails under Forest Service jurisdiction, bi-annually maintain to established standards:
    - 100 percent of designated OHV trails.
    - 50 percent of trails open to horses.
    - 50 percent of trails open to mountain bikes.
    - 33 percent of foot trails.
- **Objectives 6.B-008, 7.B-010, and 9.H-013.** Management activities are designed to meet or exceed the following Scenic Integrity Objectives, which vary by Inventoried Scenic Class and Management Prescription.

Inventoried Scenic Class	1	2	3	4	5	6	7
Scenic Integrity Objectives – <b>MRx 6.B</b>	H	H	M	M	M	M	M
Scenic Integrity Objectives – <b>MRx 7.B</b>	H	H	M	M	M	M	M
Scenic Integrity Objectives – <b>MRx 9.H</b>	H	M	L	L	L	L	L

### Inventory Needs

- Assess resource damage and rehabilitation needs at illegal access points and dispersed camping areas located in the watershed. These include: (1) dispersed camping sites in the riparian corridor at end of Ponder Creek Road; (2) illegal access by UTVs using utility ROWs at end of Ponder Creek Road (including segments of Chickamauga Creek trail) and near Manning Mill (including illegal access of Pinhoti trail); and dispersed sites/trash dump sites on National Forest lands on Cantrell Road and Maddox Gap Road (FSR 250).
- Conduct survey of Chickamauga Creek trail for maintenance/repair needs. Identify any soil/water resource issues (stream crossings, slope gradient, etc.) related to potential change in managed-use/designation of trail for bicycle traffic.
- Assess needs/methods to decommission Taylors Ridge trail.
- In the future, as project proposals are developed for the UWAC, conduct field visits to proposed treatment areas and prominent vantage points to determine visual resource coordination needs.

## **Resource Area: Lands/Special Uses/Minerals**

### Existing Condition

#### ***Lands***

National Forest System lands located within the Upper West Armuchee Creek Watershed (UWAC) occupy approximately 5566 acres. There is currently 32 miles of boundary line located within this section of the National Forest System which is adjacent to private and

other ownership. There are approximately 75 property corners within this section of property line. Previous maintenance of these property lines occurred last in 2007-08, 2010 and 2011.

### ***Special Uses***

There are several active special use permits in the Upper West Armuchee Creek Watershed. Those include 1 pipeline right-of-way, 2 power transmission line right-of-ways, 4 telecommunication sites, 1 fiber optic cable line, 2 private road easements, 1 State Department of Transportation easement, and a 19 acre cultivation/pasture allotment used for hay production.

### ***Minerals***

There are currently no known mineral permits or oil and gas leases located in the Upper West Armuchee Creek watershed.

### **Desired Condition**

#### ***Lands***

Most of the land within this watershed is manageable as one contiguous system of land however private inholdings and isolated tracts of National Forest Service system land exist. Where these situations exist the desired condition is to acquire and consolidate these properties for better management of the National Forest System and the UWAC watershed. All property boundaries between private and US Forest Service land should be maintained on a 10 year or less rotation to reduce any future property boundary issues.

### ***Special Uses***

Regional direction across the Forest and within this watershed is to phase out water uses as they expire over time. Recreational and other potential use opportunities exist in the watershed given historical and current growth trends of increased use of National Forest Service System land. Future uses will be considered, taking into account public interest, resource impacts, regional direction and forest goals and objectives. Improved coordination between resources will minimize resource conflicts and improve management of the watershed.



## ***Minerals***

There are no known plans to develop mineral leasing in this watershed.

### **Possible Management Practices/Opportunities**

## ***Lands***

The Forest will continue to explore consolidation of National Forest land within this watershed as opportunities arise through land exchange with private landowners. The Forest is in the final stages of acquiring a small tract of land adjacent to the Forest Service boundary near southwest corner of watershed along Taylors Ridge (Petty Tract C-2361, 17.69 acres).

The isolated blocks of Forest Service lands along Dicks Ridge on the eastern boundary of the watershed represent potential exchange opportunity if available and equivalent lands which adjoin National Forest could be located. To date, no exploratory effort directed towards these lands has been initiated.

In addition, the 32 miles of boundary line will need to be maintained, including repainting established property boundary markings, maintaining corner monuments and records, and resurveying those sections where the boundary markings do not exist or where land ownership is disputed. Land line refurbishment should occur every 7-10 years to keep property boundary paint up to standards.

## ***Special Uses***

Private water uses within the watershed will be phased out as ownership changes or as permit expires per regional direction. Future uses will be evaluated per request on a case by case base. The Forest Service will continue to administer National Forest Service land according to regional direction and as current Forest Land and Resource Management Plan goals and objectives allow to effectively manage and protect forest resources.

## ***Minerals***

The Forest does not anticipate any major changes in demand of mineral permits or leases.



## Related Forest Plan Goals/Objectives

### ***Lands***

- **Goal 81.** Maintain a proactive land acquisition program through exchanges and purchases. Land will be acquired primarily to meet resource management needs while following the Land Ownership Adjustment Plan with an overall goal of consolidation.
  - **Objective 81.1.** The ownership status of National Forest lands will be maintained annually in the GIS database.
  - **Objective 81.2.** Forest Plan land allocation status will be maintained annually in the GIS database in conjunction with the ownership status.
  - **Objective 81.3.** Obtain 50 percent of available in-holdings on the Forest within 15 years of Plan implementation.
  - **Objective 81.4.** Acquire all known needed rights of way within 15 years of Plan implementation.
  - **Objective 81.5.** Acquire additional lands along rivers to facilitate nature-based recreational uses, as well as to provide habitat for aquatic biota with an emphasis for aquatic T&E species or for the reintroduction of native species.
- **Goal 82.** Divest those properties through land exchange that are isolated, impacted by urban influence, and general not conducive to National Forest management and therefore more suitable in private ownership.
- **Goal 83.** Inadvertent trespass onto National Forest does not occur.
  - **Objective 83.1.** Property lines will be surveyed and marked to Forest Service standard and maintained on a 10-year rotation.
- **Goal 84.** Resolve all known title claims and encroachments affecting National Forest System lands.
  - **Objective 84.1.** Title claims and encroachments affecting National Forest System lands are to be documented, prioritized for resolution each fiscal year, and resolved within the constraints of the applicable authority.
- **Goal 85.** Acquire or exchange access with other agencies, counties, and private interests to ensure management objectives are met for all ownerships.
- **Goal 86.** Identify opportunities to work with other agencies and organizations to participate in mitigation banking activities.

### ***Special Uses***

- **Goal 54.** All designated and other utility corridors and designated communication sites will minimize environmental, social and visual impacts and ensure benefits to the public.
  - **Objective 54.1.** Process energy-related leases, licenses and permits within 90 days of the date the applicable decision is approved.
- **Goal 55.** Manage special uses consistent with protection of natural resources values, public health and safety, and cost effectiveness.
  - **Objective 55.1.** Process each special use application through initial screening within 30 working days.
  - **Objective 55.2.** Maintain current data on each special use in Special Use Data System (SUDS) database or equivalent as of the end of each fiscal year.
  - **Objective 55.3.** Maintain current annual or periodic inspections on each special use permit.
  - **Objective 55.4.** Offset costs of environmental analysis for non-categorical exclusion special use projects by collecting funds from the proponent.
- **Goal 56.** Minimize the National Forest land area affected by special use permits and their conflicts with other National Forest values.

### ***Minerals***

- **Goal 52.** Meet demands for energy and non-energy minerals consistent with Forest Plan management prescriptions, multiple-use objectives, and in accordance with existing laws and regulations.
- **Goal 53.** Acquire mineral rights that were reserved, but for which there has been no minerals activity; that is, the right has not been used.

### **Inventory Needs**

#### ***Lands***

- Improve GIS data for planning and mapping where discrepancies are encountered. Combine use of GIS data, and other data management tools along with resource coordination for accuracy of landline boundary maintenance.

### ***Special Uses***

- Improve GIS spatial data as needed for better management and administration of special use permits.

# Resource Area: Fire Management

## WUI/State and Private

Current Condition: The majority of this watershed is classified as WUI (Wildland Urban Interface). Forest Ownership consists of the upper 1/3 of the slope with private below on both sides and a few private inholdings.

### Desired Condition:

- 1) To maintain a fire resistant and fire adapted forest that will provide for increased Safety to the public and firefighters against unwanted or catastrophic wildland fires.
- 2) To promote defensible space around private structures, improvements, which will aid in fire suppression and firefighting efforts.
- 3) To promote a fire adapted and fire resistant forest that will reduce the likelihood of catastrophic wildland fires and increase the defensible space around private structures, and improvements.
- 4) To protect Public infrastructure, roads, and utility lines, from unwanted or catastrophic wildland fires
- 5) Create Firewise Communities

### Possible Management Practices/Opportunities:

- 1) Work with the Georgia Forestry Commission to identify private land holdings and explore opportunities to treat with prescribed fire under Community Protection Grants.
- 2) Identify and assist the state in supporting Firewise community development.
- 3) Treat NF lands with prescribed fire that are adjacent to WUI areas.
- 4) Work with utility companies along corridors to maintain fire resiliency to their values.

### Related Forest Plan Goals/Objectives:

- **Goal 57.** Keep firefighter and public safety the highest priority in all fire management operations.
- **Goal 58.** Reduce the risks and consequences of wildfire through fuel treatments that restore and maintain conditions of fire regime Condition Class 1 to the extent practicable.
  - **Objective 58.1.** Reduce extreme fire behavior characteristics and spotting distances by treating fuels to create a defensible space within designated wild land urban interface (WUI) zones.

- **Objective 58.2.** Locate and designate zones specific to wildland urban interface (WUI) fire management issues to allow prioritization of projects and funding based on protection needs and potential.
- **Goal 59.** Support local efforts to create solutions to hazardous fuel conditions, including development of tools or markets traditionally not cost effective.
- **Goal 60.** Determine values at risk and conduct fire management operations to minimize damage to resources.

#### Inventory Needs:

- 1) Identify private land holdings with the highest risk for exposure to wildland fires and potential for prescribed fire treatment.
- 2) Identify homes and communities units that would benefit from Stephens Grant prescribed burn treatments.
- 3) Identify subdivisions with the potential to become Firewise Communities, based on risk.
- 4) Identify areas of these burn unit areas the need Archeological and Biological/ Botanical surveys.

### **Prescribed Fire**

#### Current Condition:

- 1) Prescribe Fire usage has been very limited in the UWAC watershed. A few areas have had previous prescribed fire treatments. These areas have not had subsequent follow-up treatments.
- 2) The primary Fire Regime is 1 (0-35 year fire frequency and low to mixed severity) and Condition Class 2 and 3 (Moderate and high departure from the historic regime).
- 3) Due to the lack of large scale prescribed fires and fire suppression efforts, large accumulations of hazardous fuels are present throughout the watershed.

#### Desired Condition:

- 1) Re-establish the historic fire return interval in the watershed to improve forest health and wildlife.

- 2) Concentrate prescribed fire efforts to sites with that will promote desired fire resistant/ fire adapted forest types, such as mountain longleaf pine and shortleaf pine, interspersed with mesic hardwoods.
- 3) Burn units to reduce Virginia pine regeneration and increase regeneration of desired plant species.
- 4) Convert identified areas to woodland forest types thru the use of growing season fire.
- 5) Move the Condition Class from a 3 to a 1.
- 6) To reduce the hazardous fuels by 50%.

#### Possible Management Practices/Opportunities:

- 1) Develop landscape level burn units and burn the units on a 3 to 7 year rotation.
- 2) Incorporate prescribed burning with other vegetation management treatments and rotational burns to attain FRCC 1.
- 3) Utilize mechanical treatments along utility corridors to maximize support of landscape scale prescribed fire.
- 4) Maintain a 3-7 year rotational prescribed fire rotation to maximize hazardous fuel reduction.
- 5) Utilize natural barriers, maintained utility corridors, roads, trails, mechanical treatment areas, other prescribed fire treatments to reduce ground disturbance, cost and maximize resource benefits.

#### Related Forest Plan Goals/Objectives:

- **Goal 57.** Keep firefighter and public safety the highest priority in all fire management operations.
- **Goal 58.** Reduce the risks and consequences of wildfire through fuel treatments that restore and maintain conditions of fire regime Condition Class 1 to the extent practicable.
  - **Objective 58.1.** Reduce extreme fire behavior characteristics and spotting distances by treating fuels to create a defensible space within designated wild land urban interface (WUI) zones.
  - **Objective 58.2.** Locate and designate zones specific to wildland urban interface (WUI) fire management issues to allow prioritization of projects and funding based on protection needs and potential.

- **Objective 58.3.** Prescribe burn a three-year rolling annual average of 30,000 acres each year on the Chattahoochee and Oconee combined to meet plan goals and objectives.
- **Goal 59.** Support local efforts to create solutions to hazardous fuel conditions, including development of tools or markets traditionally not cost effective.
- **Goal 60.** Determine values at risk and conduct fire management operations to minimize damage to resources.
- **Goal 61.** Expand the role of fire to recover and sustain short interval fire-adapted ecosystems through the use of both prescribed and managed ignition fires, including allowing lightning-caused fire to function, as much as possible, as a natural process; especially in Wilderness or other custodial management areas.

#### Inventory Needs:

- 1) Identify areas that will require Archeological and Biological/Botanical surveys. Include areas with the potential for growing season burns.
- 2) Identify areas to utilize vegetation management treatments and prescribed fire together.
- 3) Identify Prescribed fire burn units.

### **Wildland Fire**

#### Current Condition:

- 1) Limited prescribe fire usage has led to the accumulation of hazardous fuel buildup, encroachment of undesirable vegetation, and overall poor forest health conditions. These conditions combined with encroaching WUI development, utility corridors and increased visitor usage have left this area ripe for a catastrophic and unwanted wildland fires.
- 2) The primary Fire Regime is 1 ( 0-35 year fire frequency and low to mixed severity) and Condition Class 2 and 3 (Moderate and high departure from the historic regime).
- 3) Over the past 10-15 years, fire activity has been low to moderate in the watershed. However, fires in this watershed have threatened private structures, improvements, and damaged private property.

#### Desired Condition:

- 1) Lower the risk of unwanted or catastrophic wildland fires through the use of prescribed fire.

- 2) Move the FRCC from a 2 & 3 to a 1
- 3) Reduce fuel loadings to provide for low intensity wildfires.
- 4) Utilize natural barriers, prescribed fire units, and mechanical treatments to minimize damage and spread of unwanted or catastrophic wildland
- 5) Utilize fire to promote a fire adapted and fire resistant forest.

#### Possible Management Practices/Opportunities:

- 1) Reduce hazardous fuels buildup by develop landscape level burn units and burn the units on a 3 to 7 year rotation and incorporate vegetation management.
- 2) Incorporate all vegetation management treatments and rotational prescribed burns to attain FRCC 1.
- 3) Work with Georgia Forestry Commission and rural Fire Departments to support prevention and education events, develop/ improve Community Wildland Fire Protection Plan (CWPP) in Walker County.
- 4) Identify/ create helispots and dipsites. Pre-identify water refill sights for fire equipment. Pre-identify Staging areas.

#### Related Forest Plan Goals/Objectives:

- **Goal 57.** Keep firefighter and public safety the highest priority in all fire management operations.
- **Goal 58.** Reduce the risks and consequences of wildfire through fuel treatments that restore and maintain conditions of fire regime Condition Class 1 to the extent practicable.
  - **Objective 58.1.** Reduce extreme fire behavior characteristics and spotting distances by treating fuels to create a defensible space within designated wild land urban interface (WUI) zones.
  - **Objective 58.2.** Locate and designate zones specific to wildland urban interface (WUI) fire management issues to allow prioritization of projects and funding based on protection needs and potential.
  - **Objective 58.3.** Prescribe burn a three-year rolling annual average of 30,000 acres each year on the Chattahoochee and Oconee combined to meet plan goals and objectives.
- **Goal 59.** Support local efforts to create solutions to hazardous fuel conditions, including development of tools or markets traditionally not cost effective.



- **Goal 60.** Determine values at risk and conduct fire management operations to minimize damage to resources.
- **Goal 61.** Expand the role of fire to recover and sustain short interval fire-adapted ecosystems through the use of both prescribed and managed ignition fires, including allowing lightning-caused fire to function, as much as possible, as a natural process; especially in Wilderness or other custodial management areas.

**Inventory Needs:**

- 1) Identify values at risk, both public and private, with the highest risk for exposure to wildland fires
- 2) Identify ingress and egress areas that can improve or impede access to for firefighters and fire equipment during wildland fires.
- 3) Identify natural barriers, roads, trails, that can be utilized to minimize fire spread.

## **Resource Area: Roads**

**Existing Condition:** The list below shows Forest Service transportation system roads in the watershed.

<b>Road name</b>	<b>Number</b>	<b>Mileage</b>	<b>Maintenance Level</b>
Smith Gap	635	1.8	4
Smith Gap Branch A	635A	1.3	3
Smith Gap Branch B	635B	0.7	2
Ruff Creek	252	8	3
South Maddox Gap	217	2	2
South Maddox Gap BR. A	217A	0.4	2
Maddox Gap	250	4.5	3
Ponder Creek	219	1.8	3
Dicks Ridge	313	0.95	2
West Armuchee	235	0.9	2

Within this watershed there are multiple drainage structures that carry water on the system roads. All are corrugated metal pipes except for one ford.

**Desired Condition:** The desired future condition of this watershed is to have a transportation system that supplies the public, the Forest Service, and other authorized

users with a safe, environmentally sustainable, equitable, financially sound, and operationally effective access to the National Forest.

#### Possible Management Practices/Opportunities

- Implement the Transportation Analysis Process (TAP) management decisions for the Upper West Armuchee Creek watershed. Strive to achieve Forest Plan Objective 48.2--- Periodically maintain roads under Forest Service jurisdiction to maintain level standard per the schedule below.
  - 50 percent of maintenance level 3 and 4 roads annually
  - 25 percent of maintenance level 1 and 2 roads annually
- Consider seasonal closure of Maddox Gap Road (FSR250) to deter continued illegal trash dumping along segments of this road.

#### Related Forest Plan Goals/Objectives

- **Goal 47.** Provide a transportation system that supplies the public, the forest service, and other authorized users with a safe, environmentally sustainable, equitable, financially sound, and operationally effective access to roaded portions of the National Forest.
- **Goal 48.** Roads do not adversely affect soil and water resources
- **Goal 49.** Close and restore unneeded roads and motorized trails

#### Inventory Needs

- The drainage area for each existing culvert needs to be determined to see which ones are undersized. Some may have to be replaced by a bridge or open box culvert.
- Identify and GPS any undesignated or “ghost” roads that are not currently recorded in the database of record (INFRA)
- Identify any roads that do not have a legal recorded easement that are used for access to or across National Forest land.
- Identify needs for road reconstruction to support the changing transportation needs to have a safe, environmentally sustainable, and operationally effective road system.